WOODSTOCK

SHOP FOX®

INTERNATIONAL

MODEL M1102/M1103
16-SPEED DRILL PRESS

OWNER'S MANUAL

Phone: (360) 734-3482 • On-Line Technical Support: tech-support@shopfox.biz

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#7958CR **Printed in China**

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine/equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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INTRODUCTION

Woodstock Technical Support

We stand behind our machines! In the event that questions arise about your machine, parts are missing, or a defect is found, please contact Woodstock International Technical Support at (360) 734-3482 or send e-mail to: **tech-support@shopfox.biz**. Our knowledgeable staff will help you troubleshoot problems and send out parts for warranty claims.

If you need the latest edition of this manual, you can download it from **http://www.shopfox.biz**.
If you have comments about this manual, please contact us at:

Woodstock International, Inc.
Attn: Technical Documentation Manager
P.O. Box 2309
Bellingham, WA 98227

About Your New 16-Speed Drill Press

Your new **SHOP FOX®** 16-Speed Drill Press has been specially designed to provide many years of trouble-free service. Close attention to detail, ruggedly built parts and a rigid quality control program assure safe and reliable operation.

The Model M1102 drill press is a 16-speed bench top model heavy duty drill press. It has a 1/2 HP motor, a maximum work table movement of 16 1/4", and a spindle-to-base distance of 24 1/4". The Model M1103 drill press is a 16-speed floor model heavy duty drill press with a 1/2 HP motor, a maximum work table movement of 25 1/2", and a spindle-to-base distance of 48". Refer to the **Specifications** on **Page 3** for similarities and differences.

Woodstock International, Inc. is committed to customer satisfaction in providing this manual. It is our intent to include all the information necessary for safety, ease of assembly, practical use and durability of this product.

M1102 Specifications

Motor Type:	TEFC Capacitor Start Induction
Motor:	1/2 HP, 110V, 8.5 Amp., Single-Phase / 60 Hz
RPM:	1725
Power Transfer:	V-Belt Drive
Bearings:	Shielded & Lubricated Ball Bearings
Power Switch:	Toggle ON/OFF Switch, w/ Safety Lock Key
Lamp Switch:	Rocker Type ON/OFF Switch
Spindle Travel:	3 3/16"
Maximum Distance, Spindle to Base:	24 1/4"
Maximum Distance, Spindle to Table:	17"
Floor to Table Top Height:	8 7/8" to 25 1/4"
Overall Height:	39"
Footprint:	19 5/8" to 12"
Table Tilt:	45° Left and Right
Table Rotation:	360°
Spindle Taper:	MT#2
Spindle to Column Distance:	6 1/2"
Chuck Size:	5/8" (1-16mm JT3), Keyed
Speed and Drive:	16, Belt Controlled
Speeds:	230, 332, 376, 470, 544, 569, 653, 760, 813, 840, 1458, 1610, 1716, 2196, 2375, 3270. RPM
Machine Weight:	108 lbs.
Shipping Weight:	117 lbs.

M1103 Specifications

Motor Type:	TEFC Capacitor Start Induction
Motor:	1/2 HP, 110V, 8.5 Amp., Single-Phase / 60 Hz
RPM:	1725
Power Transfer:	V-Belt Drive
Bearings:	Shielded & Lubricated Ball Bearings
Power Switch:	Toggle ON/OFF Switch, w/ Safety Lock Key
Lamp Switch:	Rocker Type ON/OFF Switch
Spindle Travel:	3 3/16"
Maximum Distance, Spindle to Base:	48"
Maximum Distance, Spindle to Table:	30 3/4"
Floor to Table Top Height:	19 5/8" to 45 1/4"
Overall Height:	62"
Footprint:	19 5/8" to 12"
Table Tilt:	45° Left and Right
Table Rotation:	360°
Spindle Taper:	MT#2
Spindle to Column Distance:	6 1/2"
Chuck Size:	5/8" (1-16mm JT3), Keyed
Speed and Drive:	16, Belt Controlled
Speeds:	230, 332, 376, 470, 544, 569, 653, 760, 813, 840, 1458, 1610, 1716, 2196, 2375, 3270. RPM
Machine Weight:	128 lbs.
Shipping Weight:	132 lbs.

Identification

Refer to the list below and see Figure 1 to become familiar with the drill press controls.

1. **Light Switch:** Turns light ***ON/OFF***.
2. **Power Switch:** Turns motor ***ON/OFF***.
3. **Depth Stop:** Limits quill travel to a pre-set drilling depth.
4. **Chuck Guard:** Adjustable plastic shield covering the chuck minimizes exposure to sharp drill bits.
5. **Small Lock Lever:** Locks table rotation.
6. **Mounting Holes:** When used correctly, allows for maximum drill press stability.
7. **Cast Iron Base with T-Nut Slots:** Allows for maximum vertical clearance for drilling.
8. **Rack:** Allows for the geared housing to easily raise and lower the work table in a controlled manner.
9. **Table Tilt Scale:** Displays current table-tilt angle.
10. **Crank Handle:** Raises/lowers table.
11. **Feed Handles:** Manual control of drilling depth.
12. **Belt Tension Lock:** Locks motor in place to maintain belt tension.

Refer to the list below to become familiar with the drill press terms and definitions.

Headstock: The cast iron upper portion of the drill press, which houses the quill and work light, and supports the motor and belt housing.

Drift Key: A wedge-shaped tool used to separate tapers.

T-Slot: A slot in a table or base used to trap a hex nut or hex bolt to clamp down a workpiece or a vise.

Arbor: A tapered shaft that connects the chuck to the spindle.

Quill: Houses the spindle and bearings.

Spindle: The hollow shaft that accepts the arbor.

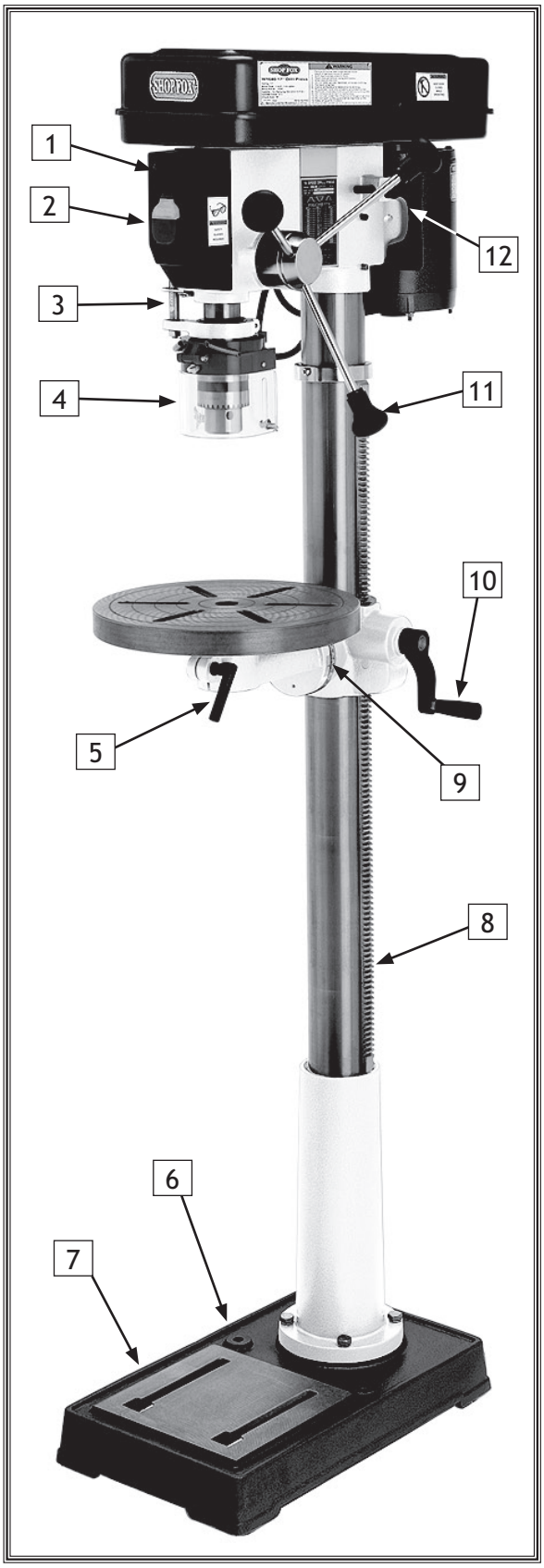


Figure 1. Drill press features and controls.

SAFETY

⚠WARNING

For Your Own Safety, Read Instruction Manual Before Operating this Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the machine.**

⚠WARNING

Safety Instructions for Machinery

1. **READ THROUGH THE ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.

2. **ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are NOT safety glasses.

3. **ALWAYS WEAR AN NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Wood dust is a carcinogen and can cause cancer and severe respiratory illnesses.

4. **ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing damage.

5. **WEAR PROPER APPAREL.** DO NOT wear loose clothing, gloves, neckties, rings, or jewelry which may get caught in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.

Safety Instructions for Machinery

6. **NEVER OPERATE MACHINERY WHEN TIRED, OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.

7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.

8. **KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.

9. **MAKE WORKSHOP CHILD PROOF.** Use padlocks, master switches, and remove start switch keys.

10. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power ***OFF*** and allow all moving parts to come to a complete stop before leaving machine unattended.

11. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.

12. **KEEP WORK AREA CLEAN AND WELL LIT.** Clutter and dark shadows may cause accidents.

13. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Undersized cords overheat and lose power. Replace extension cords if they become damaged. DO NOT use extension cords for 220V machinery.

14. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY**. Make sure switch is in OFF position before reconnecting.

15. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**

17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery ***ON***.

18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding and alignment of parts, broken parts, part mounting, loose bolts, and any other conditions that may affect machine operation. Repair or replace damaged parts.

19. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.

20. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.

21. **DO NOT OVERREACH.** Keep proper footing and balance at all times.

22. **MANY MACHINES WILL EJECT WORKPIECE TOWARD OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."

23. **ALWAYS LOCK MOBILE BASES (IF USED) BEFORE OPERATING MACHINERY**.

24. **BE AWARE THAT CERTAIN WOODS MAY CAUSE AN ALLERGIC REACTION.** in people and animals, especially when exposed to fine dust. Make sure you know what type of wood dust you will be exposed to and always wear an approved respirator.

Safety for Drill Presses

⚠WARNING

READ and understand this entire instruction manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

⚠CAUTION

USE this and other machinery with caution and respect. Always consider safety first, as it applies to your individual working conditions. No list of safety guidelines can be complete—every shop environment is different. Failure to follow guidelines could result in serious personal injury, damage to equipment or poor work results.

1. **EYE/FACE/HAND PROTECTION.** A face shield used with safety glasses is recommended. Always keep hands and fingers away from the drill bit. Never hold a workpiece by hand while drilling! DO NOT wear gloves when operating the drill.

2. **GUARD.** Only use this machine when the chuck guard is inplace and positioned over the chuck.

3. **SECURING BIT.** Properly tighten and securely lock the drill bit in the chuck.

4. **CORRECT BIT.** Use only round, hex, or triangular shank drill bits.

5. **ADJUSTING KEYS AND WRENCHES.** Remove all adjusting keys and wrenches before turning the machine ***ON***.

6. **DRILLING SHEET METAL.** Never drill sheet metal unless it is securely clamped to the table.

7. **SURFACE /WORKPIECE PREPARATION**. Never turn the drill press ***ON*** before clearing the table of all objects (tools, scrap wood, etc.) DO NOT drill material that does not have a flat surface, unless a suitable support is used.

8. **DAMAGED TOOLS.** Never use tools in poor condition. Dull or damaged cutting tools are hard to control and may cause serious injury.

9. **DRILL OPERATION**. Never start the drill press with the drill bit pressed against the workpiece. Feed the drill bit evenly into the workpiece. Back the bit out of deep holes to clear chips.

10. **OPERATING SPEED.** Always operate your drill press at speeds that are appropriate for the drill bit size and the material that you are drilling.

11. **MAINTENANCE/SPEED CHANGES.** Never do maintenance or change speeds with the machine plugged in to the power supply.

12. **MOUNTING WORKPIECES.** Use clamps or vises to secure workpiece before drilling. Position work so you avoid drilling into the table.

13. **TABLE LOCK**. Make sure the table lock is tightened before starting the drill press.

14. **EXPERIENCING DIFFICULTIES.** If at any time you are experiencing difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (360) 734-3482.

ELECTRICAL

110V Operation

The **SHOP FOX®** Model M1102/M1103 operates at 110 volts and draws 8.5 amps. Use a NEMA-style 5-15 plug and receptacle (**Figure 1**) to connect your machine to power.

We recommend connecting this machine to a dedicated circuit with a verified ground, using a 15 amp circuit breaker. Never replace a circuit breaker with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. Otherwise you may overload the wire and plugs in the circuit.

If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, you may create a fire hazard—consult a qualified electrician to reduce this risk.

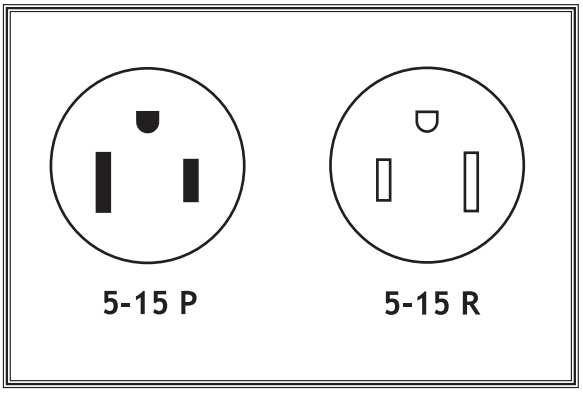


Figure 1. Typical 110V 15A 3-prong plug and outlet.

⚠WARNING

This equipment must be grounded. Verify that any existing electrical outlet and circuit you intend to plug into is actually grounded. If it is not, it will be necessary to run a separate 12 AWG copper grounding wire from the outlet to a known ground. Under no circumstances should the grounding pin be removed from any three-pronged plug or serious injury may occur.

Extension Cords

We do not recommend using an extension cord for equipment. Instead, arrange the placement of your machinery and installed wiring to eliminate the need for extension cords. If you must use an extension cord, please use the following guidelines:

- Use cords rated for Standard Service
- Never exceed a length of 50 feet
- Use cords with 14 ga. wire or bigger
- Ensure cord has a ground wire and pin
- Do not use cords in need of repair

Grounding

This machine must be grounded! If your power supply receptacle does not accommodate a ground pin, have the receptacle replaced by a qualified electrician or have an appropriate adapter installed and grounded properly. An adapter with a grounding wire does not guarantee the machine will be grounded. A ground source must be verified.

SET UP

Unpacking

⚠CAUTION

Get lifting assistance before starting assembly. The Model M1102/M1103 drill press is heavy. DO NOT attempt to lift it without help!

Your drill press has been carefully packaged for safe transporting. If you notice the machine has been damaged, please contact your authorized **SHOP FOX®** dealer immediately.

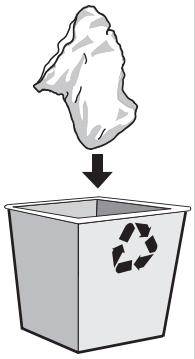
Inventory

Note: *Some parts and hardware may already be installed on the machine. Make sure to check the machine when you use this inventory list.*

Inventory (Figure 2) **Qty**

1. Headstock Assembly 1
2. Arbor 1
3. Chuck Guard.....1
4. Chuck Key.....1
5. Drift Key 1
6. Chuck.....1
7. Knob 3
8. Downfeed Handles 3
9. Table 1
10. Table Support Assembly.....1
11. Handle.....1
12. Column Model M1102 1
13. Column Model M1103 1
14. Column Support Lock Lever.....1
15. Crank Handle.....1
16. Base.....1
17. Table Lock Lever 1
18. Hardware Bag (Not Shown) 1
—Belt Cover Knob 1
—Hex Wrench 3mm.....1
—Hex Wrench 4mm.....1
—Hex Bolt M8-1.25 x 25mm (Base) 4
—Lock Washer 8mm (Base) 4

If any parts are missing, examine the packaging for the missing parts. For any missing parts, find the part number in the back of this manual and contact Woodstock International, Inc. at (360) 734-3482 or at **tech-support@shopfox.biz**



⚠WARNING

SUFFOCATION HAZARD! Immediately discard all plastic bags and packing materials to eliminate choking/suffocation hazards for children and animals.

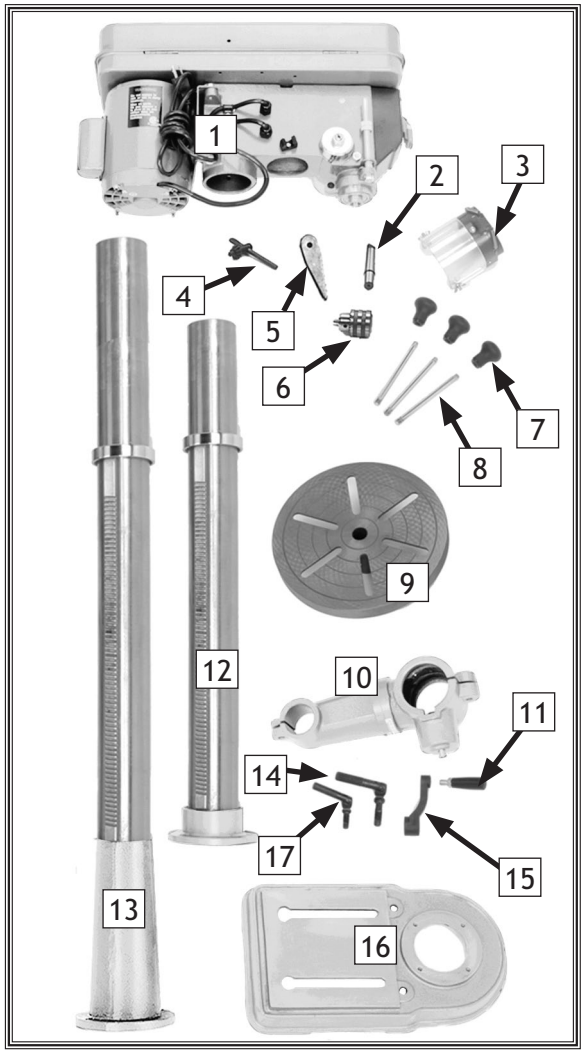


Figure 2. M1102/M1103 box inventory.

Machine Placement

- **Floor Load:** This machine distributes a heavy load in a small footprint. Some work benches may require additional bracing to support both the machine and a workpiece.
- **Working Clearances:** Consider existing and anticipated needs, size of material to be processed through the machine, and space for auxiliary stands, work tables or other machinery when establishing a location for your machine.
- **Lighting:** Lighting should be bright enough to eliminate shadow and prevent eye strain.

⚠CAUTION

Get lifting assistance before starting assembly. The Model M1102/M1103 drill press is heavy. DO NOT attempt to lift it without help!

⚠CAUTION

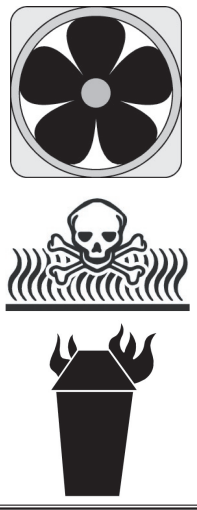
MAKE your shop "child safe." Ensure that your workplace is inaccessible to youngsters by closing and locking all entrances when you are away. NEVER allow untrained visitors in your shop when assembling, adjusting or operating equipment.

Cleaning Machine

The unpainted surfaces are coated with a waxy oil to protect them from corrosion during shipment. Remove this protective coating with a solvent cleaner or citrus-based degreaser. To clean thoroughly, some parts may need to be removed. **For optimum performance from your machine, make sure you clean all moving parts or sliding contact surfaces that are coated.** Avoid chlorine-based solvents, such as acetone or brake parts cleaner, as they will damage painted surfaces should they come in contact. Always follow the manufacturer's instructions when using any type of cleaning product.

⚠WARNING

NEVER use gasoline or other petroleum-based solvents to clean with. Most have low flash points, which make them extremely flammable. A risk of explosion and burning exists if these products are used. Serious personal injury may occur if this warning is ignored!



⚠CAUTION

ALWAYS work in well-ventilated areas far from possible ignition sources when using solvents to clean machinery. Many solvents are toxic when inhaled or ingested. Use care when disposing of waste rags and towels to be sure they DO NOT create fire or environmental hazards.

Column and Base

The column must be secured on the base to properly assemble your drill press.

To secure the column to the base, do these steps:

1. Place the column on the base and align the mounting holes.

2. Secure the column to the base with the four lock washers and hex bolts as shown in **Figure 3**.

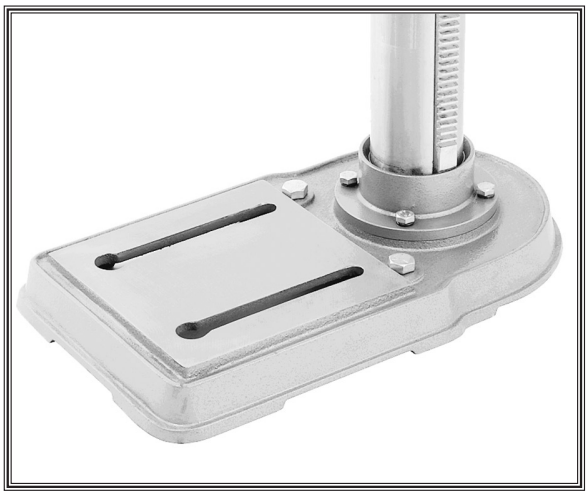


Figure 3. Column secured to base.

Table Support

The table support must be installed as described to properly assemble your drill press.

To install the table support:

1. Check to make sure the pinion is inserted into the table support, as shown in **Figure 4**, so the pinion and gear teeth mesh together.

2. Mark the top of the rack, as shown in **Figure 5**, to keep track of which end is up.

3. Remove the column ring by loosening the Phillips head screw, and remove the rack.

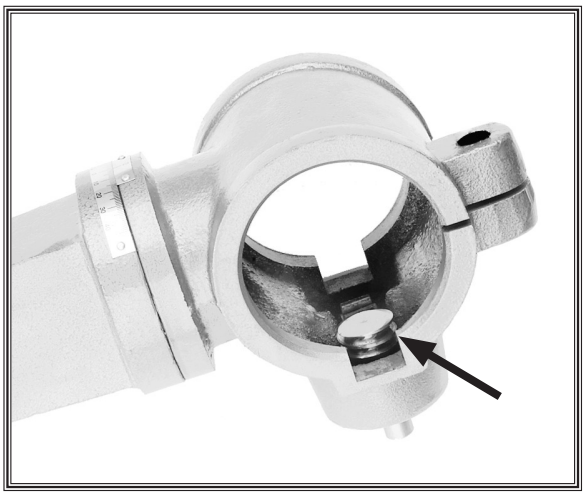


Figure 4. Pinion correctly installed in table support.

Figure 5. Marking top of rack to show which end is up.

Continued on next page

4. Place the rack inside of the table support assembly, mesh it together with the pinion, and slide the table support/rack assembly over the column, as shown in **Figure 6**.

NOTICE

DO NOT overtighten the column ring lock screw in the next step, or you will split the column ring. Merely tighten it to a snug fit.

5. Slide the column ring over the column with the beveled edge facing down (**Figure 7**), fit the beveled edge of the column ring over the rack, and tighten the column ring lock screw.

Note: *Make sure the rack is seated firmly in the lower ring.*

6. Install the crank handle over the pinion shaft, and tighten the setscrew in the crank handle against the flat part of the pinion shaft.

Note: *If the crank handle does not slide all the way onto the pinion shaft, loosen the setscrew, and gently tap the handle with a rubber hammer.*

7. Thread the handle into the crank handle.

8. Thread the large lock lever into the back of the table support assembly approximately three turns, for now.

Note: *The lock levers must be installed from the non-threaded shaft sides on the table support assembly to function correctly.*

9. Thread the small lock lever into the front part of the table support assembly approximately three turns, for now. The assembly should now be assembled as shown in **Figure 8**.

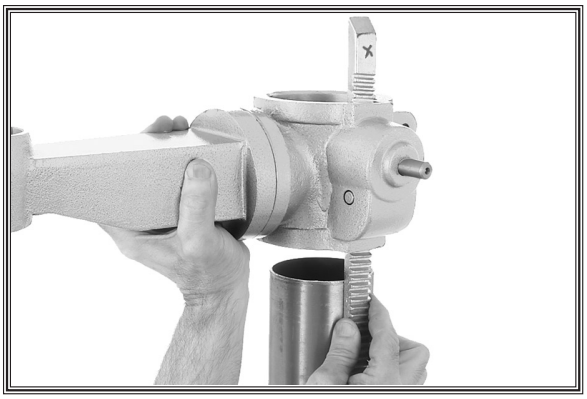


Figure 6. Sliding table support and rack over the column.

Figure 7. Correct column ring orientation.

Figure 8. Handles and lock levers installed.

Headstock

The headstock must be mounted on the column/base assembly before the drill press can be operated. Moving and installing the headstock is a two-person job.

⚠WARNING

The headstock is very heavy. In the next step, you MUST have assistance when moving, lifting or mounting the headstock on the column and base assembly.

To install the headstock, do these steps:

1. Loosen the two set screws on the right side of the headstock enough so they are flush with the inside pocket of the headstock.

NOTICE

When doing the next step, DO NOT force the headstock onto the column! If you do, you could damage the headstock and the column.

2. With the help of an assistant, lift the headstock assembly above the column, and gently slide it down the column as far as it will go.

   Note: *An alternate method is to lay the headstock on the packaging styrofoam and slide the column into the headstock, tilt the assembly up, and position the drill press on its base in the upright position.*

3. Place a ruler or tape measure on the base and suspend a plum bob from the center of the headstock spindle so it is over the tape/ruler as shown in **Figure 9**.

4. Center the headstock directly over the base as indicated by the plum bob and ruler.

5. Tighten the two headstock setscrews to the column, as shown in **Figure 10**.

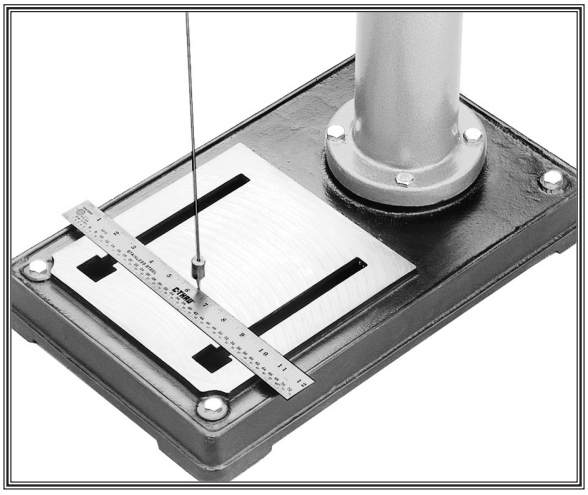


Figure 9. Aligning headstock with a typical drill press base.

Figure 10. Securing headstock to column.

SET UP

Chuck Guard

The chuck guard must be installed before the chuck is attached to the spindle.

To install the chuck guard, do these steps:

1. Loosen the Phillips head screw and lock nut on the chuck guard clamp.

2. Place the chuck guard over the spindle, and tighten the Phillips head screw and lock nut.

   Note: *(Optional) To prevent the guard from slipping off of the spindle, move the table up until it is just below the guard as shown in* **Figure 11**. *Or have an assistant hold the guard in place while you secure it.*

Figure 11. Installing chuck guard.

Drill Chuck & Arbor

The drill chuck attaches to the spindle by means of the arbor, shown in **Figure 12**. Matched tapers on the arbor and the inside of the chuck create a semi-permanent assembly when properly joined. When the drill press is shipped from the factory, a plastic plug is installed in the chuck.

To assemble the drill chuck and mount it to the spindle, do these steps:

1. Use the chuck key to back the jaws out and remove the plastic plug.

2. Use mineral spirits to thoroughly clean the drill chuck, arbor, and spindle sockets and dry all surfaces before assembly. Follow all safety warnings on the container of the mineral spirits. **Failure to clean the mating surfaces may cause the tapered fit to loosen during operation, resulting in separation and an unsafe condition.**

3. Use the chuck key to adjust the jaws of the drill chuck until they are inside the drill chuck body.

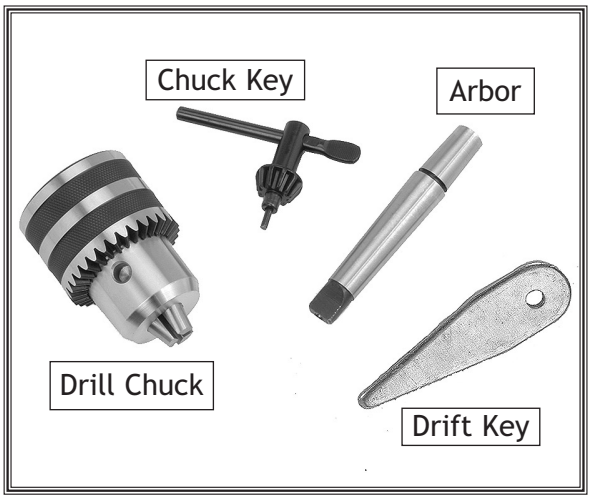


Figure 12. Chuck components.

4. Place the drill chuck face down on a workbench. The arbor has a short taper and a long taper. Place the short taper into the socket in the back of the drill chuck and tap it with a rubber or wooden mallet, as shown in **Figure 13**. If the chuck fails to remain secure on the arbor, repeat **Steps 1** & **2**.

5. Raise the chuck guard.

6. Slide the arbor into the spindle socket while slowly rotating the drill chuck. The socket has a rectangular pocket where the tang (or flat portion of the arbor shown in **Figure 13**) fits into.

7. Using only a rubber or wooden mallet, tap the chuck and arbor assembly into the quill as shown in **Figure 14. DO NOT use a steel hammer.**

⚠CAUTION

DO NOT use a steel hammer on the drill chuck to seat the arbor into the spindle. You will damage the chuck and/or spindle, which may make them unusable or unsafe.

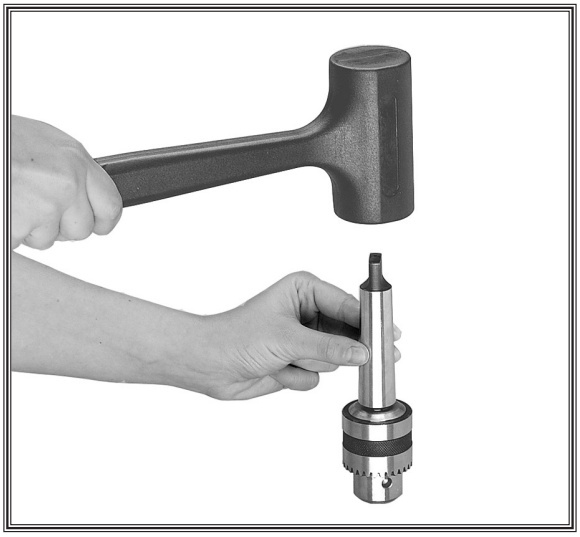


Figure 13. Seating arbor into chuck.

Figure 14. Seating arbor and chuck into spindle.

Downfeed Handles & Belt Cover Knob

The downfeed handles must be installed to properly operate the drill press.

To install the downfeed handles, do these steps:

1. Thread the knobs onto the handles, then thread the handles into the spindle hub, as shown in **Figure 15**, and tighten.

2. Install the belt cover knob in its place (see **Figure 15** for location).

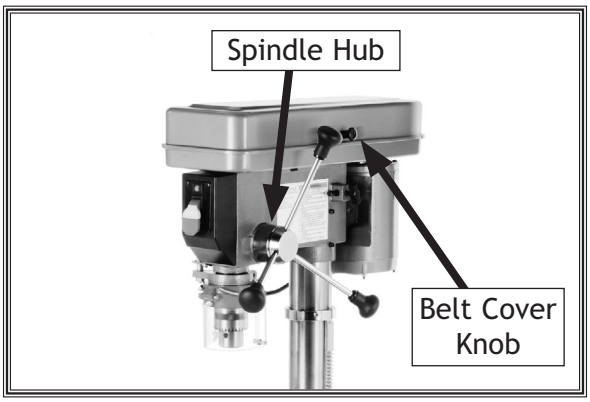


Figure 15. Downfeed handles and belt cover knob installed.

Table

The table must be installed to properly support the workpiece during operation.

To install the table, do these steps:

1. Insert the table shaft into the table support assembly.

2. Tighten the small locking lever (**Figure 16**) to secure the table in the table support assembly.

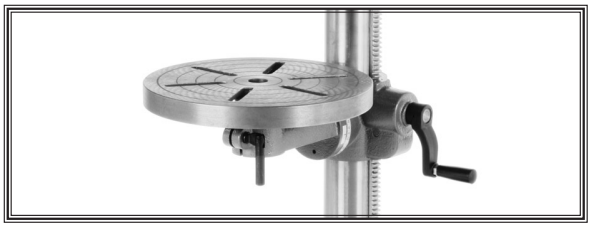


Figure 16. Table installed.

Work Light

The Model M1102/M1103 includes a 110V light socket for an optional light bulb. When the drill press is shipped from the factory, a dust plug is installed in the light socket for protection.

⚠WARNING

Use only bulbs that are "safety coated" and shatter resistant. The bulb will be exposed at the bottom of the head casting which helps with illumination. Impacts with a bulb not "safety coated" may shatter, exposing the electrical filaments and creating an electrical shock hazard.

To install a light bulb in the drill press, do these steps:

1. DISCONNECT THE DRILL PRESS FROM POWER!
2. Remove the dust plug from the light socket at the underside of the headstock.
3. Install a 60W or less light bulb.

Test Run

Once assembly is complete, you are ready to test run the drill press.

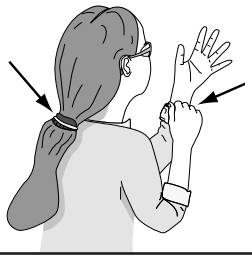
To test run the drill press:

1. Plug the drill press into the power.
2. With your finger poised on the paddle switch (in case there is a problem), flip the START button ***ON***. The drill press should run smoothly, with little or no vibration or rubbing noises.

   Investigate and correct for strange or unusual noises before operating the machine further.

   If you cannot easily locate the source of a potential problem, refer to **Troubleshooting** on **Page 27**.

⚠WARNING



Keep loose clothing rolled up and out of the way of machinery and keep hair pulled back.

⚠WARNING

Always wear safety glasses when operating the drill press. Failure to comply may result in serious personal injury.

Mounting

The Model M1102 must be secured to a bench. The Model M1103 base should be secured to the floor, or bolted to a mobile base.

Bench Mounting

To mount the Model M1102 drill press to a table:

1. Clamp the base on a bench top capable of holding approximately 100 lbs. plus the weight of the workpiece using two clamps. Make sure the surface is flat and stable.

2. Using holes in the base as a guide (**Figure 17**), drill and bolt the base to the bench top using lag bolts, or hex bolts, flat washers, and hex nuts.

Figure 17. Using holes as a drilling guide.

Floor Mounting

Once you have confirmed that your Model M1103 is running properly, we strongly recommend mounting it to the floor to ensure optimum stability.

Lag shield anchors with lag bolts and anchor studs (**Figure 18**) are two popular methods for anchoring an object to a concrete floor. We suggest you research the many options and methods for mounting your machine and choose the best that fits your specific application.

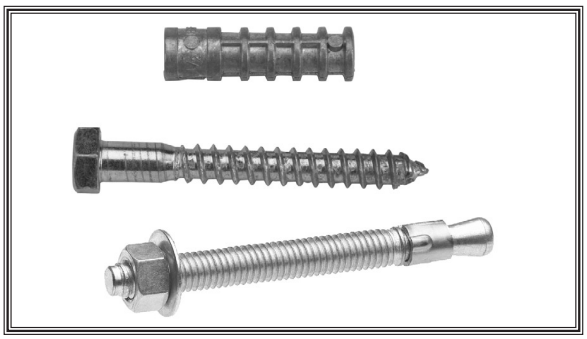


Figure 18. Typical concrete mounting hardware.

Mobile Base Mounting

Because the Model M1103 drill press is top-heavy by nature, we recommend mounting it to the floor, rather than a mobile base.

If you must use a mobile base, ALWAYS mount your drill press to a base plate inside of the mobile base, as shown in **Figure 19**.

A good quality base plate increases the standard footprint of the drill press to make it much more stable. The base plate must be at least 1½" thick and made of plywood (do not use OSB, MDF, or particle board as this type of board will soak up oils, breakdown, and screws or bolts may pull through).

⚠CAUTION

Drill presses are top-heavy and must be securely attached to a large-footprint base plate when used with a mobile base. Otherwise drill press tipping and personal injury may occur.

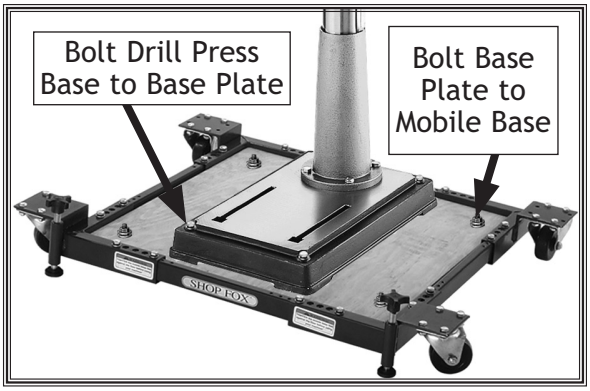


Figure 19. Drill press mounted on mobile base, using a plywood base plate for support.

OPERATIONS

General

The Model M1102/M1103 will perform many types of operations that are beyond the scope of this manual. Many of these operations can be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. **If at any time you are experiencing difficulties performing any operation, stop using the machine!**

If you are an inexperienced operator, we strongly recommend that you read books, trade articles, or seek training from an experienced Drill Press Operator before performing any unfamiliar operations. **Above all, your safety should come first!**

⚠WARNING

READ and understand this entire instruction manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

Installing & Removing Drill Bits

Any drill bit you install in the chuck must be tight enough that it will not come loose during operation.

To install a drill bit, do these steps:

1. DISCONNECT THE DRILL PRESS FROM POWER!
2. Using the chuck key, open the drill chuck wide enough to accept the shank of the drill bit.
3. Insert the drill bit as far as possible into the chuck WITHOUT allowing the chuck jaws to touch the fluted portion of the bit, and hand tighten the chuck. **Note:** *Make sure small bits are not trapped between the edges of two jaws; if they are, reinstall the drill bit or it will not be secure enough to use for drilling.*
4. Final tighten the drill bit with the chuck key.

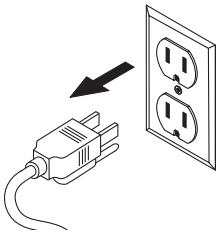
To remove a drill bit, do these steps:

1. DISCONNECT THE DRILL PRESS FROM POWER!
2. Use the chuck key to open the drill chuck, and catch the drill bit with a rag to protect your hands.

⚠WARNING

Always wear safety glasses when operating the Drill Press. Failure to comply may result in serious personal injury.

⚠WARNING



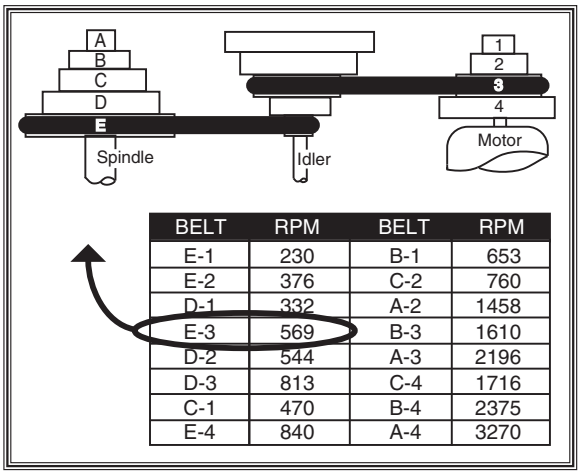
DO NOT investigate problems or adjust the Drill Press while it is running. Wait until the machine is turned *OFF*, unplugged and all working parts have come to a complete stop before proceeding!

Changing Spindle RPM

⚠WARNING

Never operate drill press with pulley cover in the open position. Your hand may become trapped in the belt and serious personal injury will occur.

The belts in the headstock must be rearranged to change spindle RPM. A chart under the pulley cover shows the belt positions needed to make the drill press run at the desired RPM. For example, the pulley ratio shown in **Figure 20** indicates belt positioning to get 569 RPM at the spindle.



BELT	RPM	BELT	RPM
E-1	230	B-1	653
E-2	376	C-2	760
D-1	332	A-2	1458
E-3	569	B-3	1610
D-2	544	A-3	2196
D-3	813	C-4	1716
C-1	470	B-4	2375
E-4	840	A-4	3270

Figure 20. Spindle RPM chart at 60 Hz.

To change spindle RPM, do these steps:

1. DISCONNECT THE DRILL PRESS FROM POWER!
2. Loosen the belt tension lock knob (shown in **Figure 21**) on the right side of the headstock, to take tension off of the V-belts and allow the motor to move freely.
3. Locate the desired speed on the **Drill, Cutter, and Hole Saw Suggested RPM Chart** starting on **Page 23**.
4. Move the V-belts to the desired V-grooves on the motor, idler, and spindle pulleys.
5. Pivot the motor toward the back of the headstock and tighten the lock knob once the desired V-belt tension is achieved.
6. Close the cover before plugging in the machine.

Figure 21. Loosening lock knob.

Depth Stop

The Model M1102/M1103 has a depth stop that allows you to drill repeated non-through holes to the same depth every time.

The depth stop consists of a stud attached to the quill with two knurled nuts that can be lowered or raised on the stud so the lower nut (depth nut) hits a stop bracket when the drill bit is lowered. The upper nut (jam nut) is then used to tighten against the depth nut to secure it in place so it doesn't move with repeated operations. **Figure 22** shows the various components of the depth stop.

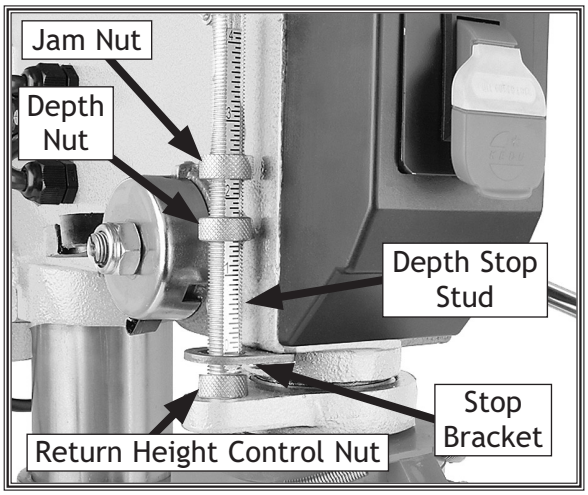


Figure 22. Depth stop components.

To set the depth stop, do these steps:

1. Lower the drill bit to the required height.
2. Thread the depth nut down against the stop bracket.
3. Lower the jam nut against the depth nut.
4. Hold the depth nut in place and tighten the jam nut against the depth nut.

Adjusting Table Tilt

Along with the standard features of a table height hand crank and a rotating table, this drill press has a 45° left/right table tilt feature.

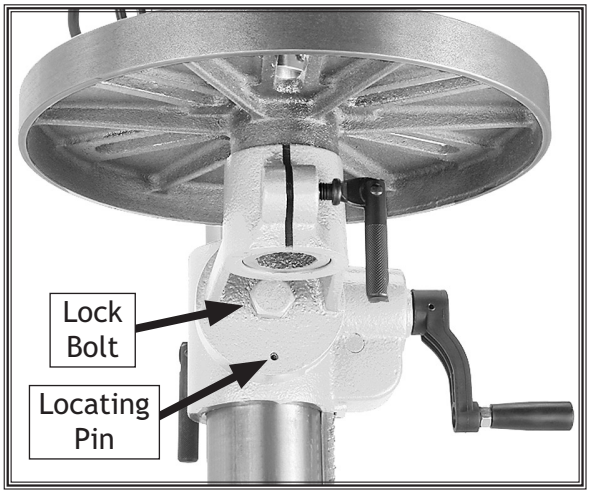


Figure 23. Table adjustment controls.

To tilt the table, do these steps:

1. Loosen the lock bolt.
2. Use a 3mm hex wrench to back out the locating pin from the hole (**Figure 23**) just enough so it allows the table to tilt.
3. Tilt the table to the desired angle up to 45°.
4. Tighten the lock bolt.
5. To return the table to 0°, loosen the lock bolt, align the arrow and the 0° mark on the angle scale, tighten the locating pin back into the hole, and tighten the lock bolt.

Drill, Cutter, and Hole Saw Suggested RPM Chart

ALWAYS follow the drill, saw, or cutter manufacturer's recommended RPM specifications. **ALWAYS** wear safety glasses. **DO NOT** use your drill press to exceed the drilling, cutting, or sawing RPM or the feed rate of your bit or cutter. Otherwise serious personal injury can occur.

The RPMs listed below are merely suggestions to help you use your drill press in the event that you cannot find a basic starting RPM point. The final RPMs may differ based on the material drilled, the pressure you apply, and the cut-quality needed. Remember, even if the RPM and all other settings are correct, cooling the tool with a lubricant and drilling a pilot hole may also be required. Refer to **WARNINGS and TIPS**, trade journals, training manuals, and other educational resources for in-depth instructions and safety knowledge.

For current product line, refer to: http://www.steelex.biz/drilling.cfm.

Sanding Sleeves or Grinding Bits	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
1", 1-1/2", 2"	2000	1725	1000	3100	3100	3100
Twist Type Drill Bits: (Wood, Plastic, and Metal)						
1/16" to 3/16"	3000	3000	2500	3000	3000	3000
1/4" to 3/8"	3000	1500	2000	1200	2500	1000
7/16" to 5/8"	1500	750	1500	750	1500	600
11/16" to 1"	750	500	-	400	1000	350
Spade Drill Bits: (Wood)						
1/4" to 1/2"	2000	1500	-	-	-	-
5/8" to 1"	1750	1500	-	-	-	-
1-1/8" to 1-1/2"	1500	1000	-	-	-	-
Spade with Spur Drill Bits: (Wood and Plastic)						
3/8" to 1"	2000	1800	500	-	-	-
Brad Point Drill Bits: (Wood and Plastic)						
1/8"	1800	1200	1500	-	-	-
1/4"	1800	1000	1500	-	-	-
3/8"	1800	750	1500	-	-	-
1/2"	1800	750	1000	-	-	-
5/8"	1800	500	750	-	-	-
3/4"	1400	250	750	-	-	-
7/8"	1200	250	500	-	-	-
1"	1000	250	250	-	-	-
Forstner Drill Bits: (Wood and Plastic)						
1/4" to 11/16"	2400	1600	250	-	-	-
3/4" to 1-1/16"	1800	1200	250	-	-	-
1-1/8" to 1-7/16"	1200	800	250	-	-	-
1-1/2" to 2-1/8"	600	450	-	-	-	-
2-1/4" to 3-1/8"	480	250	-	-	-	-
Multi-Spur Drill Bits: (Wood)						
2-1/8" to 4"	250	250	-	-	-	-
Countersink Cutters: (Wood, Plastic, and Metal)						
2-Flute Cutter	1400	1400	-	-	-	-
5-Flute Cutter	1000	750	750	250	250	250
Plug Cutters: (Wood)						
3/8" to 1/2"	1200	1000	-	-	-	-
5/8" to 1"	800	600	-	-	-	-
Carbide Rosette Cutters: One-Piece Shear Type (Wood)						
2-1/2" to 3"	1800	500	-	-	-	-
Rosette Cutters: Replaceable Carbide-Knife Type (Wood)						
2-1/4" to 3-1/8"	350	250	-	-	-	-

WARNINGS and TIPS

- **WARNING**: The larger the drill bit or hole saw and the slower the RPM, the greater the chance the tool could aggressively grab the workpiece, damage the tool and workpiece and cause injury. High RPMs can melt plastic, burn wood, and dull the tool.
- **WARNING**: Use a 5-Flute cutter when cutting into plastics, brass, aluminum, and mild steel. A 2-Flute cutter can aggressively grab the workpiece and damage the tool.
- **TIP:** To increase the life of drill bits, cutters, hole saws, and improve cut quality, use a lubricant equivalent to these:
  Plastics: use a soapy-water lubricant
  Brass: use a water-based lubricant
  Mild Steel: use an oil-based lubricant
  Aluminum: use a paraffin-based lubricant
  Cast Iron: use a pipe-thread cutting lubricant
  Wood: use no lubricant.
- **TIP:** Raise the drill bit, cutter, or hole saw often to clear chips and cool the tool.
- **TIP**: When drilling plastics with spade bits, use a spade bit with spurs.
- **TIP**: Plug cutters and rosette cutters are for wood only; however, carbide-tipped bits and cutters cut at a higher RPM, and can cut materials other than wood depending on cutter type. Carbide makes better cuts and lasts longer than HSS steel.
- **TIP:** When using hole saws, apply firm and even pressure, so the saw teeth contact the surface all at the same time-not at an angle. You can also flip the workpiece and finish drilling from the other side.
- **TIP:** To prevent drill bit wandering, use a center punch to start the drill bit.

Saws: Bi-Metal Hole Saws (Most Materials)															
Hole Saw Diameter	Soft Wood	Hard Wood	Plastic	Mild Steel	Cast Iron	Brass	Aluminum	Hole Saw Diameter	Soft Wood	Hard Wood	Plastic	Mild Steel	Cast Iron	Brass	Aluminum
9/16"	1150	870	1320	580	400	790	900	2-7/8"	240	180	275	120	80	160	180
5/8"	1100	825	1250	550	365	730	825	3"	230	170	260	115	75	150	170
11/16"	1000	750	1140	500	330	665	750	3-1/16"	220	165	250	110	75	150	170
3/4"	920	690	1050	460	300	600	690	3-1/8"	220	165	250	110	70	140	165
13/16"	850	635	970	425	280	560	635	3-3/16"	210	155	240	105	70	140	165
7/8"	780	585	890	390	260	520	585	3-1/4"	210	155	240	105	70	140	155
15/16"	740	555	845	370	245	495	555	3-5/16"	200	150	225	100	70	130	155
1"	700	525	800	350	235	470	525	3-3/8"	200	150	225	100	65	130	150
1-1/16"	650	480	740	325	215	435	480	3-7/16"	200	150	225	100	65	130	150
1-1/8"	600	450	685	300	200	400	450	3-1/2"	190	140	215	95	65	130	145
1-3/16"	570	430	650	285	190	380	425	3-9/16"	190	140	215	95	65	120	145
1-1/4"	550	410	625	275	180	360	410	3-5/8"	190	140	215	95	60	120	140
1-5/16"	520	390	595	260	175	345	390	3-11/16"	180	135	205	90	60	120	140
1-3/8"	500	375	570	250	165	330	375	3-3/4"	180	135	205	90	60	120	135
1-7/16"	480	360	545	240	160	315	360	3-13/16"	180	135	205	90	60	120	135
1-1/2"	460	345	525	230	150	300	345	3-7/8"	180	135	205	90	60	120	135
1-9/16"	440	330	500	220	145	290	330	4"	170	130	195	85	55	110	130
1-5/8"	420	315	475	210	140	280	315	4-1/16"	170	130	195	85	55	110	120
1-11/16"	410	310	465	205	130	260	295	4-1/8"	160	120	180	80	55	110	120
1-3/4"	390	290	445	195	130	260	295	4-3/16"	160	120	180	80	55	110	120
1-13/16"	380	285	435	190	125	250	285	4-1/4"	160	120	180	80	55	100	120
1-7/8"	360	270	400	180	120	240	270	4-5/16"	160	120	180	80	55	100	120
2"	340	255	385	170	115	230	255	4-3/8"	160	120	180	80	50	100	120
2-1/16"	330	245	375	165	110	220	245	4-7/16"	150	110	170	75	50	100	105
2-1/8"	320	240	365	160	105	210	240	4-1/2"	150	110	170	75	50	100	105
2-3/16"	310	230	355	155	105	205	240	4-9/16"	150	110	170	75	50	95	100
2-1/4"	300	225	340	150	100	200	225	4-5/8"	150	110	170	75	50	95	100
2-5/16"	290	215	330	145	100	195	225	4-11/16"	150	110	170	75	50	95	100
2-3/8"	280	210	320	140	95	190	220	4-3/4"	150	110	170	75	50	95	95
2-7/16"	280	210	320	140	95	185	210	4-13/16"	130	100	150	65	45	90	95
2-1/2"	270	200	310	135	90	180	205	4-7/8"	130	100	150	65	45	90	90
2-9/16"	270	200	310	135	85	175	200	5"	130	100	150	65	45	90	90
2-5/8"	260	195	295	130	85	170	195	5-1/4"	120	90	135	60	40	85	85
2-11/16"	260	195	295	130	85	165	190	5-1/2"	120	90	135	60	40	85	85
2-3/4"	250	185	285	125	80	160	185	5-3/4"	110	80	125	55	35	75	75
2-13/16"	250	185	285	125	80	160	185	6"	110	80	125	55	35	75	75

Arbor Removal

The arbor can be removed to install another drill chuck in the spindle. A drift key is included to help remove the arbor from the spindle. Usually, once the chuck and arbor have been properly mounted together, they are considered semi-permanent connections. (If you would like to install a different chuck, we recommend getting a new arbor for that chuck.)

To remove the drill chuck and arbor, do these steps:

1. DISCONNECT THE DRILL PRESS FROM POWER!

2. Rotate the downfeed handles until the drift-key slot is exposed in the side of the quill. For now, keep the downfeed handles in this position.

3. Move the table up until it is 1/4" below the bottom of the chuck, and place a towel or cloth under the chuck.

4. Rotate the spindle until the inner drift-key slot is aligned with the outer slot, as shown in **Figure 24**. You will see through the spindle when the slot is properly aligned.

5. Insert the drift key into the drift-key slot.

6. Tap the drift key with a rubber or wooden mallet, as shown in **Figure 25**, until the chuck releases and catch the chuck with your hand.

7. Remove the drift key and carefully retract the quill into the headstock.

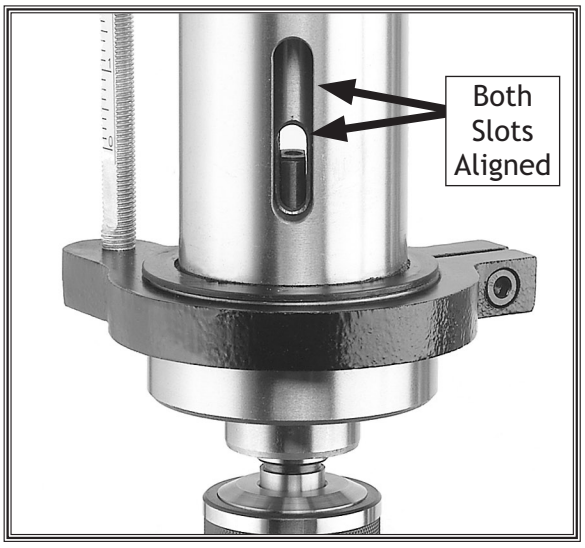


Figure 24. Inner and outer drift-key slots aligned.

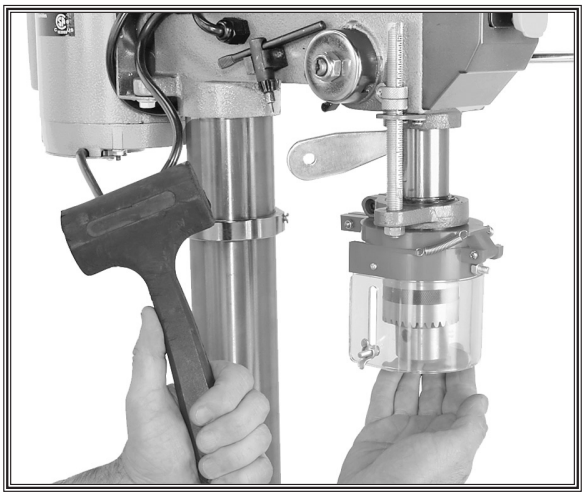
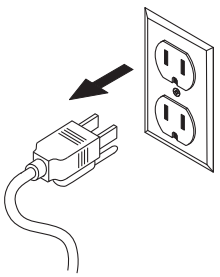


Figure 25. Using drift key to remove arbor.

MAINTENANCE

General

Periodic maintenance on your Model M1102 and M1103 Drill Press will ensure its optimum performance. Make a habit of inspecting your drill press before each use.



⚠WARNING

NEVER adjust or service the machine while it is running. Wait until the machine is turned off, unplugged and all working parts have come to a stop before proceeding!

Check for the following conditions and repair or replace when necessary.

1. Loose or missing base mounting bolts.
2. Worn switch.
3. Worn or damaged cords and plugs.
4. Damaged drive belt.
5. Loose chuck or arbor.
6. Any other condition that could hamper the safe operation of this machine.

V-Belts

Inspect regularly for tension and wear. Check pulleys to ensure that they are properly aligned.

Table and Base

Tables can be kept rust-free with regular applications of oil or anti-rust products.

Lubrication

Since all bearings are shielded and permanently lubricated, simply leave them alone until they need to be replaced. DO NOT lubricate them.

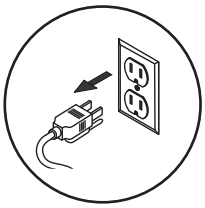
For other items on this machine, such as the quill, table and column, horizontal and vertical columns, an occasional application of light machine oil is all that is necessary to maintain smooth rust-free operation.

Before applying any lubricant, clean off the old lubricant, and any sawdust or metal chips.

DO NOT over lubricate, your goal is to achieve adequate lubrication. Too much lubrication will attract dirt and sawdust, and various parts of your machine could loose freedom of movement.

SERVICE

Troubleshooting



This section covers the most common problems and corrections with this type of machine. **WARNING! DO NOT make any adjustments until power is disconnected and moving parts have come to a complete stop!**

Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	1. Plug or receptacle is at fault or wired incorrectly. 2. Start capacitor is faulty. 3. Motor connection is wired incorrectly. 4. Power supply is faulty, or is switched ***OFF***. 5. Safety switch key is at fault. 6. ON/OFF switch is faulty. 7. Cable or wiring is open or has high resistance. 8. Motor is at fault.	1. Test power plug and receptacle for good contact and correct wiring. 2. Replace capacitor. 3. Correct motor wiring (see **Page 32**). 4. Make sure all hot lines and grounds are operational and have correct voltage on all legs. 5. Install or replace safety key, or replace switch assembly. 6. Replace faulty switch. 7. Troubleshoot wires for internal or external breaks, check for disconnected or corroded connections and repair or replace wiring. 8. Test, repair or replace motor.
Machine stalls or is underpowered.	1. Incorrect spindle speed for task. 2. Machine is undersized for the task. 3. Bit or cutter is dull. 4. Low power supply voltage. 5. Belt(s) is slipping. 6. Plug or receptacle is at fault. 7. Motor connection is wired incorrectly. 8. Pulley is slipping on shaft. 9. Motor bearings are at fault. 10. Motor has overheated. 11. Motor is at fault.	1. Decrease spindle speed. 2. Use smaller drill bits/cutters and reduce the feed rate and spindle speed. 3. Sharpen/replace bit or cutter. 4. Make sure hot lines and grounds are operational w/ correct voltage. 5. Replace bad belts, align pulleys, and re-tension. 6. Test power plug and receptacle for good contact and correct wiring. 7. Correct motor wiring (see **Page 32**). 8. Replace loose pulley and shaft. 9. Rotate motor shaft for noisy or burnt bearings, repair/replace as required. 10. Clean inside/outside of motor, let cool, and reduce workload on machine. 11. Test, repair or replace motor.

Continued on next page

Symptom	Possible Cause	Possible Solution
Machine has vibration or noisy operation.	1. Motor or component is loose.	1. Inspect, replace for stripped or damaged bolts/nuts, and re-tighten with thread locking fluid.
	2. Belts are slapping belt cover.	2. Replace/realign belts with a new matched set, and retension belts (refer to **Page 21**).
	3. V-belt(s) is worn or is loose.	3. Replace belts.
	4. Motor fan is rubbing on fan cover.	4. Replace/repair dented fan cover, and replace loose or damaged fan.
	5. Pulley is loose.	5. Remove pulley, replace with key as required, and re-install securely.
	6. Machine is incorrectly mounted to the floor, or the floor is uneven.	6. Make sure floor mounting hardware is tight; place shims under machine.
	7. Chuck or cutter is at fault.	7. Replace out-of-round chuck, replace or resharpen cutter, use appropriate feed rate and cutting RPM.
	8. Motor bearings are at fault.	8. Check bearings, replace motor or bearings as required.
	9. Spindle bearings at fault.	9. Replace bearing.

Continued on next page

Drill Press Operations

Symptom	Possible Cause	Possible Solution
Drilling stops, but the motor still operates.	1. The belt is loose or worn. 2. The pulley for the spindle shaft or the motor is slipping on the shaft. 3. Bit slips in chuck.	1. Replace and/or adjust the belt. 2. To resecure the pulley, do these steps: a. DISCONNECT THE DRILL PRESS FROM POWER! b. Remove the setscrew on the slipping pulley. c. Align the flats on the pulley shaft with the setscrew hole. d. Reinstall and tighten the setscrew. 3. Tighten bit; inspect bit for burrs or other obstructions that might interfere with clamping surface.
The chuck wobbles or is loose on the spindle shaft.	1. Foreign material is stuck between the chuck-to-spindle mating surface. 2. Damaged chuck.	1. Remove the chuck and clean and de-burr the tapered chuck and spindle mating surfaces, then reassemble. 2. Replace.
The spindle does not retract completely in the uppermost position or it binds.	1. The quill shaft is gummy with sawdust and oil. 2. The feed shaft return spring is weak. 3. The quill deflection screw is binding the quill.	1. Clean the gummy substance with penetrating oil and lubricate with a light coat of oil. 2. Increase the feed shaft return spring tension as described on **Page 30**. 3. Loosen the jam nut, and slightly turn out the screw where the quill binds. Retighten the jam nut and recheck for binding and looseness at all spindle locations.
The quill has excessive deflection.	1. The quill shaft is at fault. 2. The quill and/or bearings are worn.	1. Adjust the quill screw. 2. Replace the quill and/or bearings.
Holes drilled at an angle.	1. Table is not at 90 degrees.	1. Adjust table angle (see **Page 22**).
Drill bit wobbles, holes are oversized.	1. Drill bit installed incorrectly.	2. Remove drill bit and reinstall.

Feed Shaft Spring Tension

The feed shaft return spring is adjusted at the factory; however, during the life of the drill press you may want to adjust the feed shaft return spring so the pressure suits your operating needs.

To adjust the feed shaft spring tension, do these steps:

1. DISCONNECT THE DRILL PRESS FROM POWER!

2. Wipe off any oil on the spring lock cover so it does not slip in your fingers when you hold the cover from spinning (see **Figure 26**).

⚠CAUTION

A high tension coiled spring is underneath the cover. Put on heavy leather gloves to protect yours hands from possible lacerations when removing the cover in the next step.

3. While holding the spring lock cover against the side of the headstock so the cover stays splined with the locking lug; loosen the cover nut approximately 1/4" (see **Figure 27**).

4. Pull the cover outward just enough to disengage the spring-cover lock slot from the locking lug.

   Note: *It is important to keep a good grip during this step. Letting go of the cover will cause the spring to rapidly uncoil.*

5. Rotate the cover counterclockwise to increase spring tension, or in the clockwise direction to reduce spring tension.

6. Engage the next available spring-cover lock slot with the locking lug and hold the spring lock cover tightly against the side of the headstock.

7. Snug the cover nut against the spring cover just until the nut stops, and then back off the nut approximately 1/3 turn, or just enough so there is no binding during complete spindle travel.

8. Tighten the cover nut.

⚠WARNING

Wear safety glasses when adjusting the coil spring. Serious eye injury may occur if this warning is ignored!

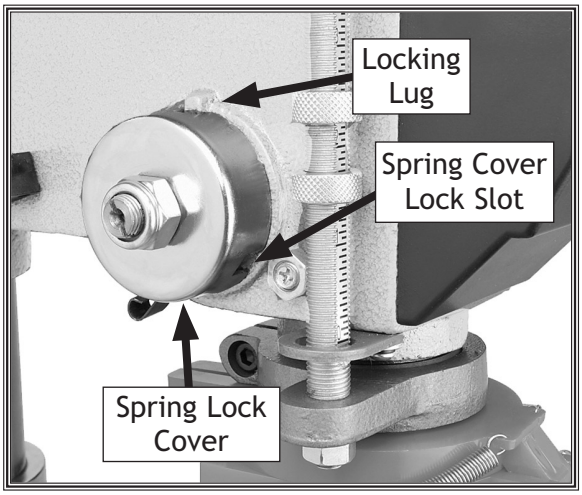


Figure 26. Feed shaft return spring assembly.

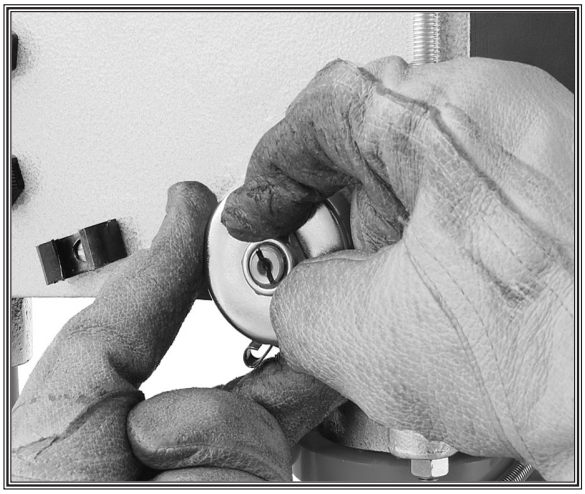


Figure 27. Loosening cover nut.

SERVICE

Electrical Components

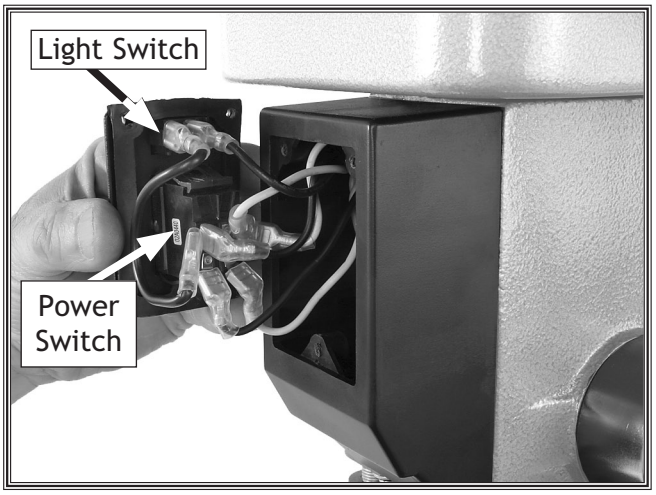


Figure 28. Power and light switch assembly.

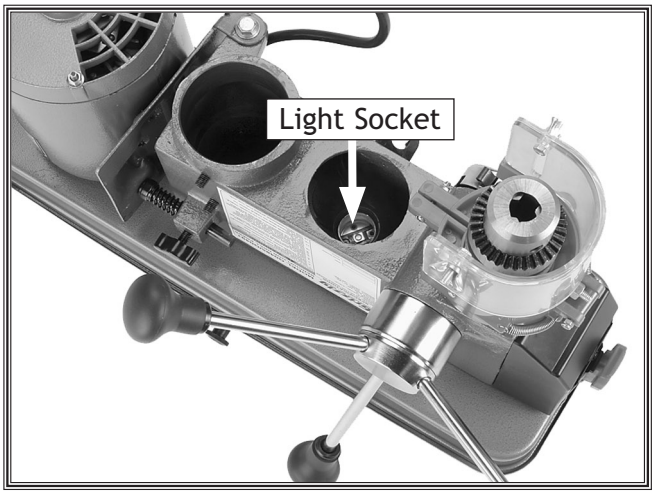
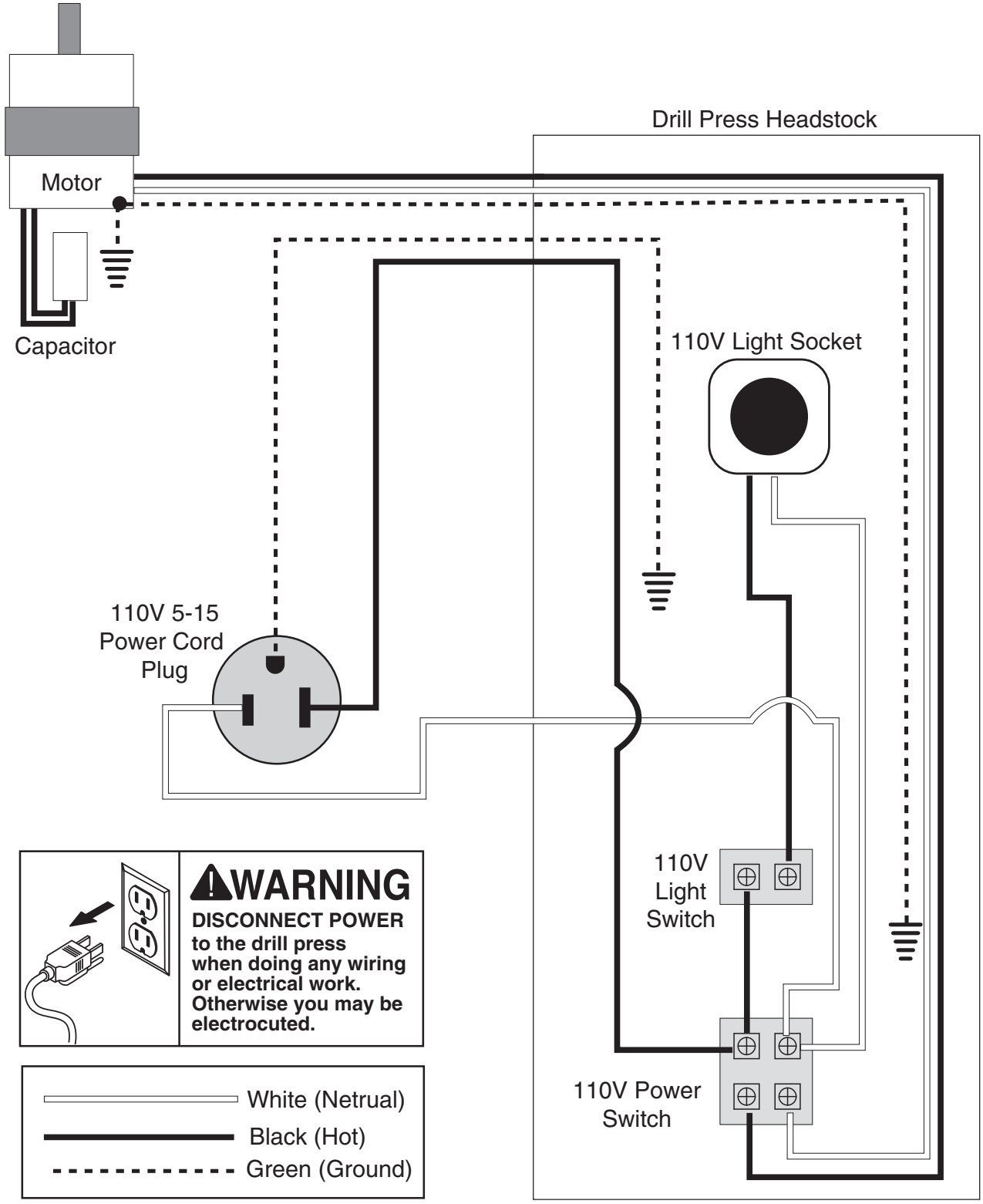


Figure 30. Light socket with dust plug removed.

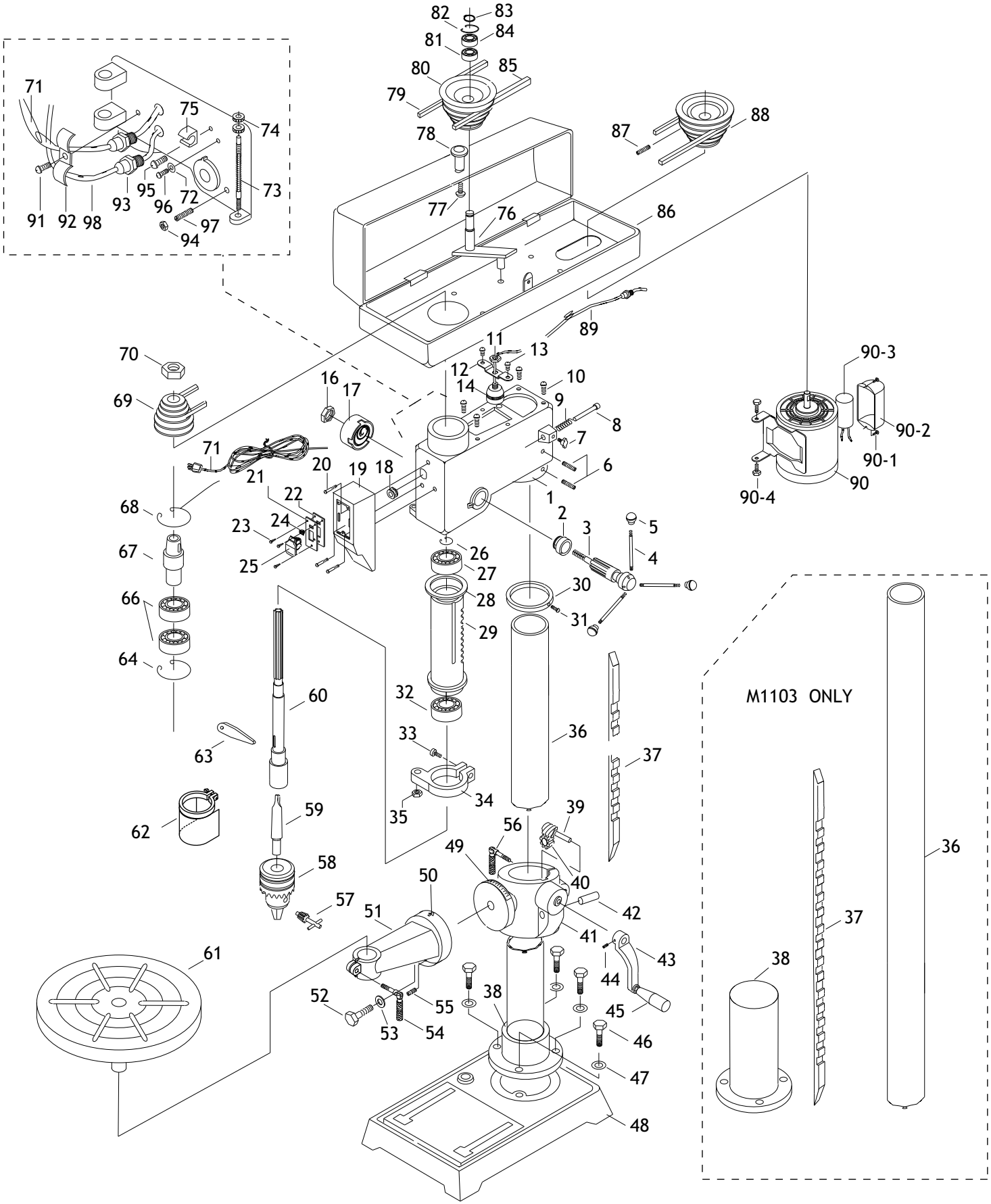
Figure 29. Capacitor.

110V Wiring Diagram M1102/M1103



Service Notes

M1102/M1103 Parts Diagram



M1102/M1103 Parts List

REF	PART #	DESCRIPTION
1	XM1102001	HEAD CASTING
2	XM1102002	SCALE SLEEVE
3	XM1102003	PINION SHAFT
4	XM1102004	FEED HANDLE M10-1.5 X 155
5	XM1102005	KNOB M10-1.5
6	XPSS14M	SET SCREW M8-1.25 X 12
7	XM1102007	KNOB BOLT M8-1.25 X 15
8	XM1102008	BELT TENSION ADJ. ROD
9	XM1102009	COMPRESSION SPRING
10	XPFS11M	FLANGE SCREW M6-1 X 10
11	XM1102011	KNURLED NUT M8-1.25
12	XM1102012	LAMP FRAME
13	XPS09M	PHLP HD SCR M5-.8 X 10
14	XM1102014	LAMP HOLDER
16	XPLN09M	LOCK NUT M12-1.25
17	XM1102017	TORSION SPRING AND CAP
18	XM1102018	RUBBER BUSHING
19	XM1102019	SWITCH BOX
20	XPS09M	PHLP HD SCR M5-.8 X 10
21	XM1102021	SWITCH MOUNTING PLATE
22	XM1102022	PLATE GASKET
23	XPHTEK31M	TAP SCREW M4 X 14
24	XM1102024	LAMP SWITCH
25	XM1102025	POWER SWITCH
26	XPR03M	EXT RETAINING RING 12MM
27	XP6201	BALL BEARING 6201ZZ
28	XM1102028	RUBBER GASKET
29	XM1102029	QUILL
30	XM1102030	COLUMN RING
31	XPS68M	PHLP HD SCR M6-1 X 10
32	XP6204	BALL BEARING 6204ZZ
33	XPSB02M	CAP SCREW M6-1 X 20
34	XM1102034	DEPTH GAUGE HOLDER
35	XPN03M	HEX NUT M8-1.25
36	XM1102036	COLUMN (M1102)
36	XM1103036	LONG COLUMN (M1103)

REF	PART #	DESCRIPTION
37	XM1102037	RACK (M1102)
37	XM1103037	LONG RACK (M1103)
38	XM1102038	BASE FLANGE-SHORT (M1102)
38	XM1103038	BASE FLANGE-LONG (M1103)
39	XM1102039	PINION GEAR
40	XM1102040	GEAR
41	XM1102041	TABLE BRACKET
42	XM1102042	GEAR SHAFT
43	XM1102043	CRANK ARM
44	XPSS01M	SET SCREW M6-1 X 10
45	XM1102045	HANDLE
46	XPB07M	HEX BOLT M8-1.25 X 25
47	XPLW04M	LOCK WASHER 8MM
48	XM1102048	BASE
49	XM1102049	SCALE
50	XM1102050	POINTER
51	XM1102051	TABLE SUPPORT ASSEMBLY
52	XPB154M	HEX BOLT M16-2 X 30
53	XPLW10M	LOCK WASHER 16MM
54	XM1102054	LOCK LEVER M10-1.5 X 25
55	XPSS01M	SET SCREW M6-1 X 10
56	XM1102056	LOCK LEVER M12-1.75 X 40
57	XM1102057	KEY 16MM JT3
58	XM1102058	CHUCK 16MM JT3
59	XM1102059	ARBOR MT2 X JT3
60	XM1102060	SPINDLE MT2
61	XM1102061	TABLE
62	XM1102062	CHUCK GUARD ASSEMBLY
63	XM1102063	DRIFT KEY
64	XPR23M	INT RETAINING RING 40MM
66	XP6203	BALL BEARING 6203ZZ
67	XM1102067	DRIVER SLEEVE
68	XPR23M	INT RETAINING RING 40MM
69	XM1102069	SPINDLE PULLEY
70	XM1102070	PULLEY NUT 1/2-20

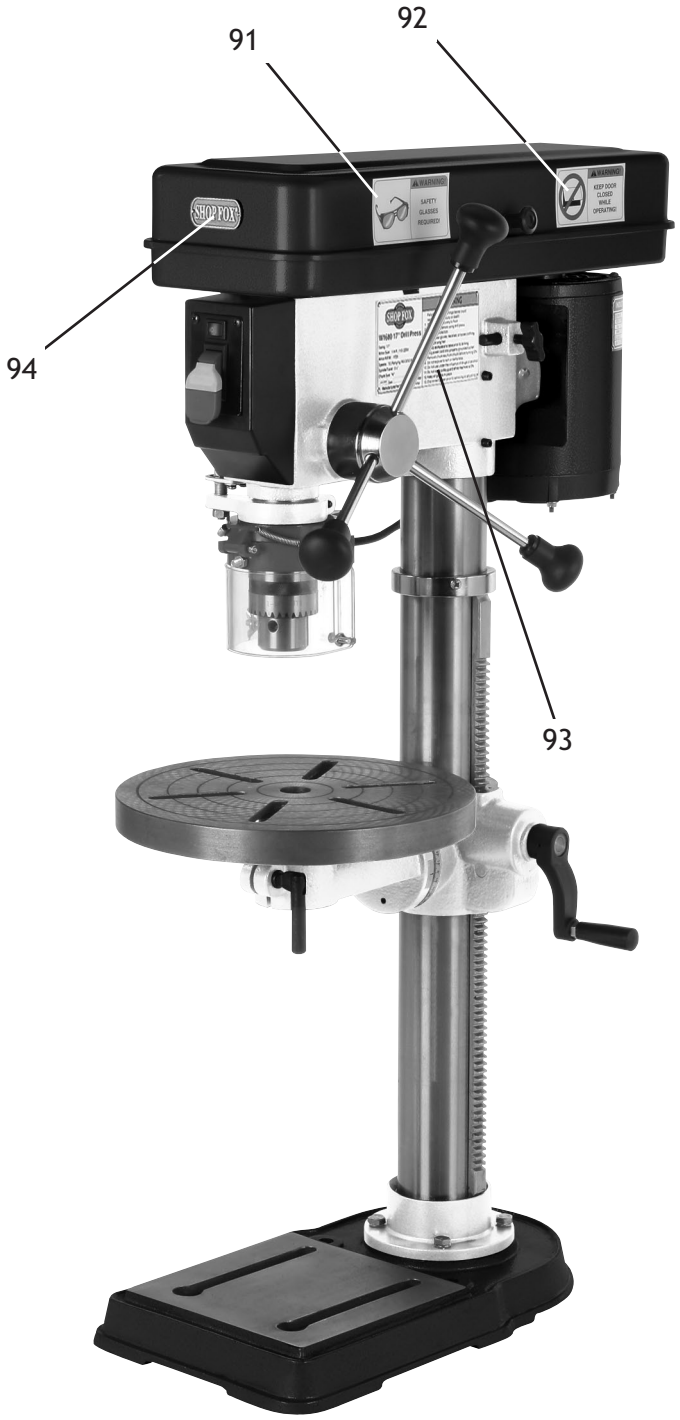
REF	PART #	DESCRIPTION
71	XM1102071	WIRING HARNESS
72	XPW05M	FLAT WASHER 4MM
73	XM1102073	DEPTH STOP ROD
74	XM1102074	KNURLED NUT M12-1.75
75	XM1102075	KEY HOLDER
76	XM1102076	MIDDLE PULLEY FRAME
77	XPFS11M	FLANGE SCREW M6-1 X 10
78	XM1102078	BELT COVER KNOB M6-1
79	XPVM22	V-BELT M-22 3L220
80	XM1102080	MIDDLE PULLEY
81	XP6202	BALL BEARING 6202ZZ
82	XPR21M	INT RETAINING RING 35MM
83	XPR05M	EXT RETAINING RING 15MM
84	XP6202	BALL BEARING 6202ZZ
85	XPVM22	V-BELT M-22 3L220
86	XM1102086	PULLEY GUARD

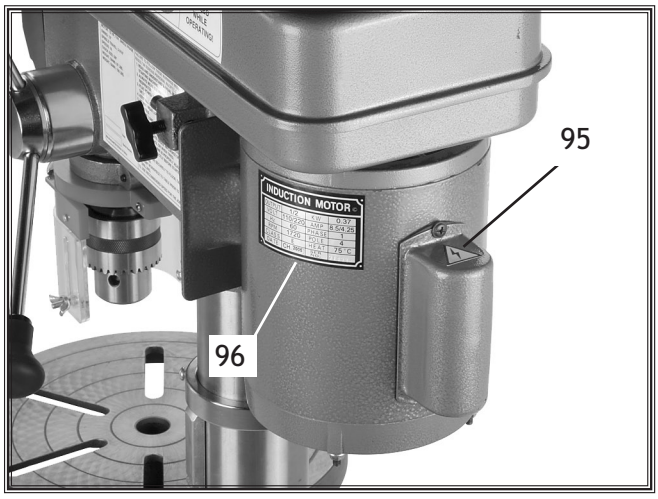
REF	PART #	DESCRIPTION
87	XPSS01M	SET SCREW M6-1 X 10
88	XM1102088	MOTOR PULLEY
89	XM1102089	MOTOR CORD
90	XM1102090	MOTOR
90-1	XPFS01M	FLANGE SCREW M5-.8 X 8
90-2	XM1102090-2	CAPACITOR COVER
90-3	XPC150A	CAPACITOR 150MFD, 250VAC
90-4	XPFB12M	FLANGE BOLT M8-1.25 X 18
91	XPS09M	PHLP HD SCR M5-.8 X 10
92	XM1102092	WIRE STRAP
93	XM1102093	STRAIN RELIEF
94	XPN03M	HEX NUT M8-1.25
95	XPS09M	PHLP HD SCR M5-.8 X 10
96	XPS56M	PHLP HD SCR M4-.7 X 16
97	XPSS87M	SET SCREW M8-1.25 X 28
98	XM1102098	WIRING HARNESS

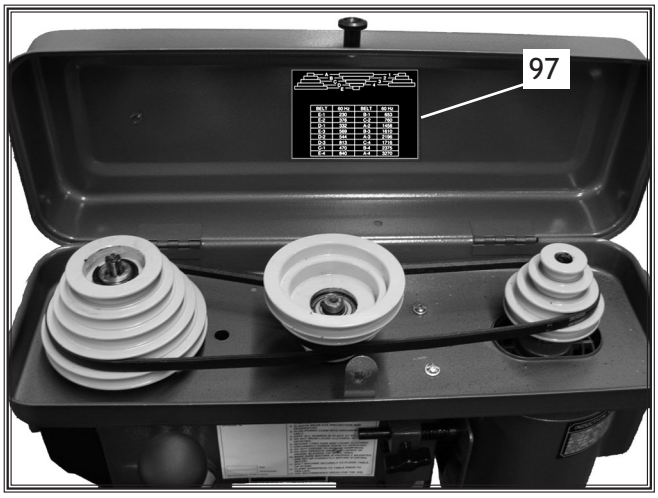
Label Placement and Parts

⚠WARNING

Safety labels warn about machine hazards and how to prevent machine damage or injury. The owner of this machine MUST maintain the original location and readability of all labels on this machine. If any label is removed or becomes unreadable, REPLACE that label before allowing the machine to enter service again. Contact Woodstock International, Inc. at (360) 734-3482 or www.shopfoxtools.com to order new labels.







REF	PART #	DESCRIPTION
191	XLABEL01H	SAFETY GLASSES LABEL
192	XLABEL03	CLOSE COVER LABEL
193	XM1102193	MACHINE DATA LABEL (M1102)
193	XM1103193	MACHINE DATA LABEL (M1103)
194	XM1102194	SHOP FOX LOGO PLATE
195	XLABEL04S	ELECTRICAL LABEL
196	XM1102196	MOTOR DATA LABEL
197	XM1102197	BELT SPEEDS LABEL

Parts Notes

Warranty

Woodstock International, Inc. warrants all **SHOP FOX®** machinery to be free of defects from workmanship and materials for a period of two years from the date of original purchase by the original owner. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, lack of maintenance, or reimbursement of third party expenses incurred.

Woodstock International, Inc. will repair or replace, at its expense and at its option, the **SHOP FOX®** machine or machine part which in normal use has proven to be defective, provided that the original owner returns the product prepaid to the **SHOP FOX®** factory service center or authorized repair facility designated by our Bellingham, WA office, with proof of their purchase of the product within two years, and provides Woodstock International, Inc. reasonable opportunity to verify the alleged defect through inspection. If it is determined there is no defect, or that the defect resulted from causes not within the scope of Woodstock International Inc.'s warranty, then the original owner must bear the cost of storing and returning the product.

This is Woodstock International, Inc.'s sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant that **SHOP FOX®** machinery complies with the provisions of any law or acts. In no event shall Woodstock International, Inc.'s liability under this warranty exceed the purchase price paid for the product, and any legal actions brought against Woodstock International, Inc. shall be tried in the State of Washington, County of Whatcom. We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of our products.

Every effort has been made to ensure that all **SHOP FOX®** machinery meets high quality and durability standards. We reserve the right to change specifications at any time because of our commitment to continuously improve the quality of our products.

Warranty Registration

Name_____

Street _____

City _____ State_____ Zip_____

Phone #_____ Email _____ Invoice #_____

Model #_____ Serial #_____ Dealer Name_____ Purchase Date_____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

_____ Advertisement ____ Friend ____ Local Store
_____ Mail Order Catalog ____ Website ____ Other:

2. How long have you been a woodworker/metalworker?

_____ 0-2 Years _____ 2-8 Years ____ 8-20 Years _____ 20+ Years

3. How many of your machines or tools are **Shop Fox®**?

_____ 0-2 _____ 3-5 ____ 6-9 _____ 10+

4. Do you think your machine represents a good value? _____ Yes ____ No

5. Would you recommend **Shop Fox®** products to a friend? _____ Yes ____ No

6. What is your age group?

_____ 20-29 ____ 30-39 ____ 40-49
_____ 50-59 ____ 60-69 ____ 70+

7. What is your annual household income?

_____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
_____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

8. Which of the following magazines do you subscribe to?

____ Cabinet Maker
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Modeltec
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Practical Homeowner
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

9. Comments:_____

_____

_____

_____

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TAPE ALONG EDGES--PLEASE DO NOT STAPLE